

Patent application

Patent claims

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1. A shift mechanism for bicycle gears, comprising an actuating lever (1) that is arranged in such a way that it can rotate about a central axis (11) fixed in relation to the housing (2) and is intended for control 10 of an actuating part (3), which is arranged in the housing (2), likewise in such a way that it can rotate about the central axis (11), and has a winding groove (4) for a tension cable (5), a pawl (6) interacting with toothing (7) on the actuating part (3) to wind up 15 the tension cable (5), further comprising a release and retaining mechanism, comprising a first toothed segment (8) and a second toothed segment (9), which are connected to the actuating part (3), and a release lever (10), which interacts alternately with the first toothed segment (8) and the second toothed segment (9), characterized in that arranged pivotably in the housing 20 (2) there is a detent element (12) that can be moved by the release lever (10) and has a first detent nose (13) and a second detent nose (14), the first detent nose 25 (13) interacting with the first toothed segment (8) and the second detent nose (14) interacting with the second toothed segment (9), the actuating part (3) thereby being turned by a tensile force, applied by the tension cable (5), when one of the two detent noses (13, 14) is 30 disengaged from the toothed segment (8,9).

2. The shift mechanism as claimed in claim 1, characterized in that the detent element (12) is mounted pivotably on a pivot (15) that is arranged in a manner fixed in relation to the housing and essentially 35 perpendicular to the central axis (11). *p*

3. The shift mechanism as claimed in claim 1 or 2, characterized in that the pivot (15) is at a distance from the central axis (11) corresponding essentially to the radii of the toothed segments (8,9).

*Claim 2*

*1 to 4.* The shift mechanism as claimed in ~~one of claims~~  
~~1 to 3,~~ characterized in that the pivot (15) is  
arranged approximately centrally between the first  
toothed segment (8) and the second toothed segment (9).

*5.* The shift mechanism as claimed in ~~one of claims~~  
~~1 to 4,~~ characterized in that the detent element (12)  
is spring-loaded relative to the housing (2) in the  
direction of engagement of the second detent nose (14).

*6.* The shift mechanism as claimed in ~~one of claims~~  
~~1 to 5,~~ characterized in that the first toothed segment  
(8) is connected rotationally to the actuating part (3)  
by a first detent disk (16), and the second toothed  
segment (9) is connected rotationally to the actuating  
part (3) by a second detent disk (17).

*15.* A shift mechanism for bicycle gears, comprising  
an actuating lever (1) that is arranged in such a way  
that it can rotate about a central axis (11) fixed in  
relation to the housing and is intended for control of  
an actuating part (3), which is arranged in the housing  
*20.* (2), likewise in such a way that it can rotate about  
the central axis (11), and has a winding groove (4) for  
a tension cable (5), a pawl (6) interacting with  
toothing (7) on the actuating part (3) to wind up the  
tension cable (5), further comprising a release and  
*25.* retaining mechanism, comprising a first toothed segment  
(8) and a second toothed segment (9), which are  
connected to the actuating part (3), and a release  
lever (10), which interacts alternately with the first  
toothed segment (8) and the second toothed segment (9),  
*30.* characterized in that, for actuation of the release and  
retaining mechanism by means of a detent element (12),  
the release lever (10) has a cam contour (19) that  
comprises at least one rising cam part (12) and one  
*35.* falling cam part (22), thereby allowing at least two  
gear ratios to be shifted upon actuating the release  
lever (10), while the detent element (12) interacts  
with the cam contour (19).

*8.* The shift mechanism as claimed in claim 7,  
characterized in that the detent element (12) interacts

with the release lever (10) in such a way that, when the release lever (10) is actuated, the detent element (12) performs a rocking motion, during which, in succession, a first detent nose (13), on the one hand, 5 comes into engagement with the first toothed segment (8), and a second detent nose (14), on the other hand, comes into engagement with the second toothed segment (9).

9. The shift mechanism as claimed in ~~either of~~ 10 ~~claims 7 or 8~~, characterized in that the detent element (12) has an edge (18) that interacts with a cam contour (19) on the release lever (10). <sup>claim 1</sup>

10. The shift mechanism as claimed in ~~one of claims~~ 15 ~~7 to 9~~, characterized in that the edge (18) is part of an extension (20) on the detent element (12). <sup>claim 7</sup>

11. The shift mechanism as claimed in ~~one of claims~~ 20 ~~7 to 10~~, characterized in that the release lever (10) is designed as a trigger lever that returns to a rest position (N) through the restoring force of a spring (23) after each actuation. <sup>claim 7</sup>

12. The shift mechanism as claimed in claim 1, characterized in that arranged pivotably on the actuating lever (1) is a pawl (6) that interacts with toothing (24) connected to the actuating part (3). <sup>12</sup>

13. The shift mechanism as claimed in claim ~~1 or~~ 25 ~~12~~, characterized in that the toothing (24) is connected to one of the two detent disks (16, 17). <sup>12</sup>

14. The shift mechanism as claimed in ~~one of claims~~ 30 ~~4, 12 or 13~~, characterized in that the toothing (24) is connected integrally to the detent disk (17). <sup>claim 12</sup>

15. The shift mechanism as claimed in ~~one of claims~~ 35 ~~1, 12, 13 or 14~~, characterized in that the pawl (6) is out of engagement with the toothing (24) in the rest position of the actuating lever (10). <sup>claim 12</sup>

16. A shift mechanism for bicycle gears, comprising an actuating lever (1) that is arranged in such a way that it can rotate about a central axis (11) fixed in relation to the housing and is intended for control of an actuating part (3), which is arranged in the housing

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(2), likewise in such a way that it can rotate about the central axis (11), and has a winding groove (4) for a tension cable (5), a pawl (6) interacting with toothing (7) on the actuating part (3) to wind up the 5 tension cable (5), further comprising a release and retaining mechanism, comprising a first toothed segment (8) and a second toothed segment (9), which are connected to the actuating part (3), and a release lever (10), which interacts alternately with the first 10 toothed segment (8) and the second toothed segment (9), characterized in that the actuating lever (1) has, relative to the actuating part (3), at least one stop (25, 26), which interacts with a stop extension (27) when the first or last gear ratio is reached, thereby 15 distinguishing the rest position (I) of the actuating lever (1) in the first gear ratio and/or the rest position (II) of the actuating lever (1) in the last gear ratio from the normal rest position (N) of the actuating lever (1) in the remaining gear ratios.

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